

E-1
10/25/94

October 25, 1994

Ms. Verneta Simon
On-Scene Coordinator
US Environmental Protection Agency
77 W. Jackson Blvd., HSE-5J
Chicago, IL 60604

RE: Lindsay Light II Site, 316 E. Illinois St., Chicago, IL

Dear Ms. Simon:

During the course of the investigation of the above-referenced site, decontamination fluids were generated from the washing of the down-hole gamma logging equipment and the soil sampling equipment. That water was stored in a 55-gallon drum, locked in an on-site trailer pending analysis.


We have received results of the analysis of this water which we have attached to this letter. No evidence of contamination from the radioactive material is indicated in these results.

Upon receipt of your concurrence, it is our intention to discharge this water into the on-site storm sewer, which drains to the Chicago City combined storm/sanitary sewer system. Inasmuch as the water was originally potable water from the public water supply, and analysis shows no evidence of impairment, it is our opinion that this disposal method will not result in any adverse environmental impacts.

Please advise us at your earliest convenience of the USEPA's response to this request.

Regards,

STS CONSULTANTS, LTD.


Richard G. Berggreen
Principal Geologist

RGB:BB1:seb

cc: Charles Gardner, CDCT
Vince Oleskiewicz, Baker & McKenzie

STS Consultants Ltd.
Consulting Engineers

1415 Lake Cook Road
Deerfield, Illinois 60015
708.272.6520/Fax 708.488.2721

**TELEDYNE BROWN ENGINEERING****Environmental Services****Midwest Laboratory****700 Landwehr Road • Northbrook, IL 60062-2310****Phone (708) 564-0700 • Fax (708) 564-4517**

Mr. Steve Newlin
STS Consultants LTD
1415 Lake Cook Road
Deerfield, IL 60015

LABORATORY REPORT NO.: 8100-3184
DATE: 10-10-94
SAMPLES RECEIVED: 09-29-94
TYPE OF REPORT: COMPLETE
PURCHASE ORDER NO.: STS 27313-ZK

Dear Mr. Newlin:

Below are the results of the analyses for gross alpha and gross beta in two (2) water samples collected September 27, 1994.

Sample Description	Lab Code	Concentration (pCi/L)	
		gross α	gross β
Drum-1	SPW-5184	1.2 \pm 1.0	6.1 \pm 1.3
Drum-2	SPW-5185	<0.9	12.9 \pm 0.7

The error given is the probable counting error at 95% confidence level. Less than values are based on 3 sigma counting error for background samples.

Sincerely,

Tony Coorlim,
Special Projects

TC:lsd

APPROVED BY

L. G. Huebner, M. S.
Manager

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

**Calculations for Lindsay Light II Site Water Samples Generated from
Site Investigation Activity - May 1994 for STS Project No. 27313-ZH**

1) Minimum Detectable Activity (MDA) for Counting System

$$MDA = \frac{4.65 \sigma}{E \times Vol \times 2.22 E6}$$

$$MDA = \frac{4.65 (0.067)}{(0.3419)(100)(2.22E6)}$$

$$MDA = 4.1 E-09 \mu Ci/ml$$

2) Water Sample Concentration Calculations for Individual Samples
(from Sample Counting Sheet)

Drum 1, #1 Results = 4.1 E-09, 4.1 E-09
Average = 4.1 E-09 $\mu Ci/ml$ or MDA

Drum 1, #2 Results = 4.1 E-09, 2.8 E-09
Average = $3.45 \pm 0.65 E-09 \mu Ci/ml$

Drum 2, #1 Results = 4.1 E-09, 1.7 E-08, 9.5 E-09
Average = $1.0 \pm 0.53 E-08 \mu Ci/ml$

Drum 2, #2 Results = 4.1 E-09, 4.1 E-09
Average = 4.1 E-09 $\mu Ci/ml$ or MDA

3) Overall Average Concentrations and Standard Deviation

Drum 1 - $3.78 \pm 0.65 E-09 \mu Ci/ml$ or <MDA

Drum 2 - $7.76 \pm 5.67 E-09 \mu Ci/ml$

The 10 CFR 20, Table 2, Column 2 concentration limit for Thorium-232 in water releases is $3 E-08 \mu Ci/ml$. The monthly average limit for releases to sanitary sewers is $3 E-07 \mu Ci/ml$. The above analyses show that the water generated from the on-site work is essentially non-radioactive and can be free released as necessary.

M.J.W. JOB NO. 142-94-073-01 DATE 9/13-14/94 TIME 1500
LOCATION MTW Office INSTRUMENT MODEL Ludlum 1000
INSTRUMENT SERIAL NO. 64322 PROBE MOD./SER. Ludlum 43-10/054854
CALIBRATION DATE 4/30/94 CHECKED BY DAD EFFICIENCY (%) $\frac{7574}{21534} = 35.17\%$
HIGH VOLTAGE SETTING 900V THRESHOLD N/A WINDOW N/A

9/13 BACKGROUND COUNTS 7 COUNTING TIME 10 BKG RATE 0.7 cpm

TECHNICIAN: L. A. Dooley VERIFICATION: James V. Wieromski DATE 9/15/94